NCERT Mathematics Class 10 Exemplar Ch 11 Area Related to Circles Part 7

11. Floor of a room is of dimensions $5m \times 4m$ and it is covered with circular tiles of diameters $50\,cm$ each as shown in Fig. 11.18. Find the area of floor 134 that remains uncovered with tiles. (Use $\pi = 3.14$)

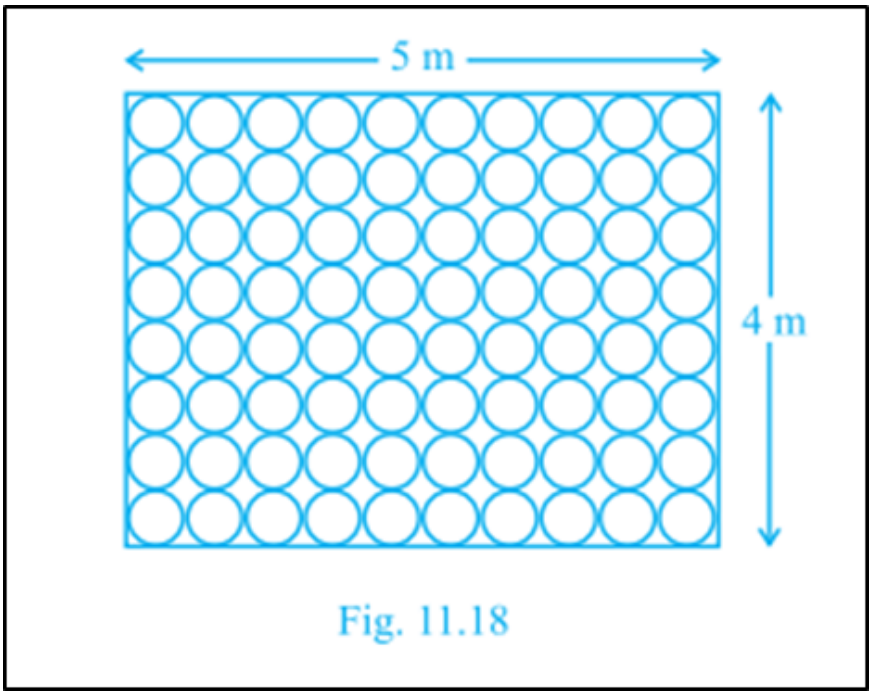

Fig. 11.18

Answer: $4.3m^2$

12. All the vertices of a rhombus lie on a circle. Find the area of the rhombus, if area of the circle is $1256cm^2$. ($Use\ \pi = 3.14$) .

Answer: $800cm^2$

13. An archery target has three regions formed by three concentric circles as shown in Fig. 11.19. If the diameters of the concentric circles are in the ratio $1:2:3$, then find the ratio of the areas of three regions.

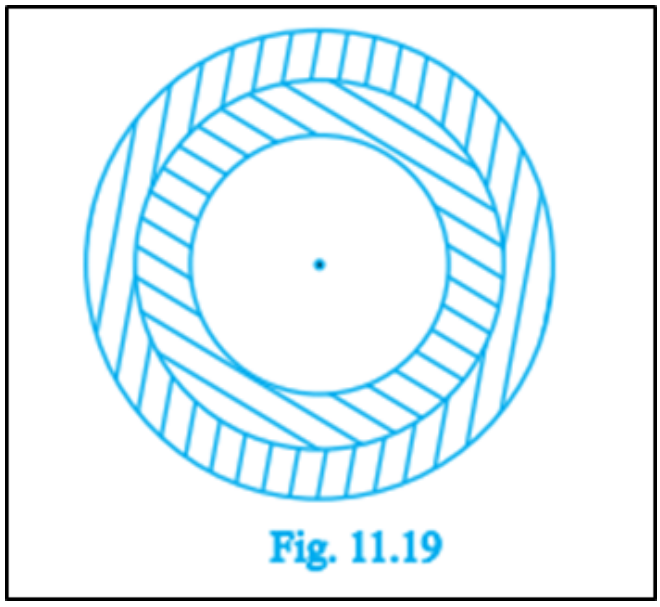

Fig. 11.19

Answer: $1:3:5$

14. The length of the minute hand of a clock is 5 cm. Find the area swept by the minute hand during the time period $6:05a\,m$ and $6:40a\,m$.

Answer: $45\frac{5}{6}cm^2$

15. Area of a sector of central angle 200° of a circle is $770cm^2$. Find the length of the corresponding arc of this sector.

Answer: $73\frac{1}{3}cm$, Areas: $\frac{154}{3}cm^2$, $154cm^2$; Arc lengths: $\frac{44}{3}cm$; Arc lengths of two sectors of two different circles may be equal, but their area need not be equal.

16. The central angles of two sectors of circles of radii $7\,cm$ and $21\,cm$ are respectively 120° and 40°. Find the areas of the two sectors as well as the lengths of the corresponding arcs. What do you observe?

17. Find the area of the shaded region given in Fig. 11.20.

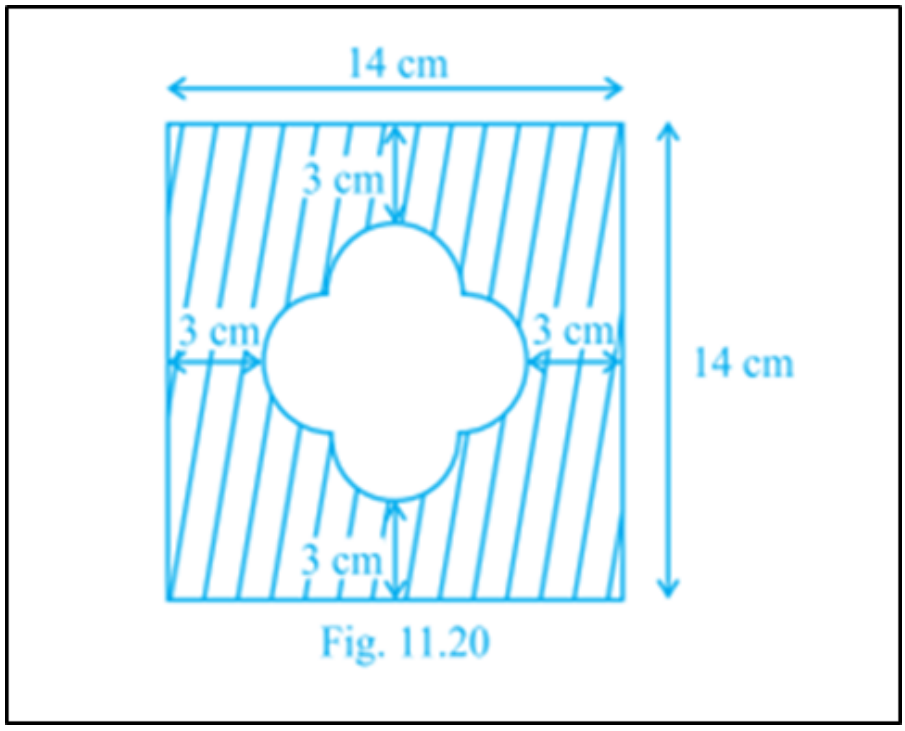

Fig. 11.20

Answer: $180-8\pi\,cm^2$

18. Find the number of revolutions made by a circular wheel of area $1.54m^2$ in rolling a distance of $176m$.

Answer: 40

19. Find the difference of the areas of two segments of a circle formed by a chord of length $5\,cm$ subtending an angle of 90° at the centre.

Answer: $\frac{25\pi}{4} + \frac{25}{2} cm^2$

20. Find the difference of the areas of a sector of angle $120°$ and its corresponding major sector of a circle of radius $21\ cm$.

Answer: $462 cm^2$